

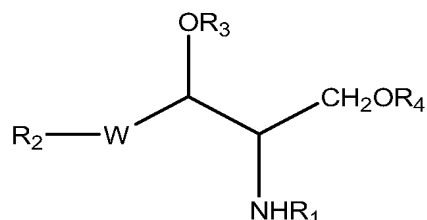
**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-29 (Cancelled).

30 (Currently Amended). A compound of formula (I):



wherein

**R<sub>1</sub>** represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group -C(O)R<sub>5</sub>;

**R<sub>2</sub>** and **R<sub>5</sub>** represent, independently, a branched or linear C<sub>10</sub>-C<sub>24</sub> alkyl, alkenyl or polyenyl ~~group~~group;

**R<sub>3</sub>** and **R<sub>4</sub>** are independently a group -C(O)-NR<sub>6</sub> **R<sub>7</sub>**, in which **R<sub>6</sub>** and **R<sub>7</sub>** being the same or different for R<sub>3</sub> and R<sub>4</sub> ~~and~~ represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or **R<sub>3</sub>** is a hydrogen; or **R<sub>3</sub>** and **R<sub>4</sub>** form together with the oxygen atoms to which they are bound a heterocyclic ring comprising -C(O)-NR<sub>9</sub>-[R<sub>8</sub>-NR<sub>9</sub>]<sub>m</sub>-C(O)-, in which **R<sub>8</sub>** represents a

saturated or unsaturated C<sub>1</sub>-C<sub>4</sub> alkyl and **R<sub>9</sub>** represents a hydrogen or a polyalkylamine of the formula  $-(R_8-NR_9)_n-$ , wherein said R<sub>9</sub> or each alkylamine unit R<sub>8</sub>NR<sub>9</sub> may be the same or different in said polyalkylamine; and **n** and **m**, represent, independently, an integer from 1 to 10; and

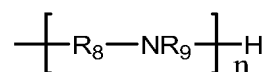
**W** represents ~~a group selected from~~ -CH=CH-, -CH<sub>2</sub>-CH(OH)- or -CH<sub>2</sub>-CH<sub>2</sub>-.

31 (Previously Presented). The compound of Claim 30, wherein R<sub>1</sub> represents a -C(O)R<sub>5</sub> group, R<sub>5</sub> being as defined.

32 (Currently Amended). The compound of Claim 30, wherein said R<sub>2</sub> and R<sub>5</sub> represent, independently, a linear or branched C<sub>12</sub>-C<sub>18</sub> alkyl or alkenyl ~~groups~~group.

33 (Previously Presented). The compound of Claim 30, wherein W represents -CH=CH-.

34 (Currently Amended). The compound of Claim 30, wherein **R<sub>1</sub>** represents a -C(O)R<sub>5</sub> group; **R<sub>5</sub>** represents a C<sub>12</sub>-C<sub>18</sub> linear or branched alkyl or alkenyl; **W** represents -CH=CH-; **R<sub>2</sub>** represents a C<sub>12</sub>- C<sub>18</sub> linear or branched alkyl or alkenyl; **R<sub>1</sub>-R<sub>3</sub>** and **R<sub>4</sub>** represent, independently, a group  $-C(O)-NR_6R_7$ , and **R<sub>3</sub>** may also represent a hydrogen, wherein **R<sub>6</sub> and R<sub>7</sub>** represent, independently, a hydrogen or a polyalkylamine having the general formula (II):



wherein

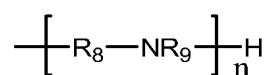
**R<sub>8</sub>** represent a C<sub>1</sub>-C<sub>4</sub> alkyl;

**R<sub>9</sub>** represents a hydrogen or a polyalkylamine branch of formula (II), said **R<sub>8</sub>** and **R<sub>9</sub>** may be the same or different for each alkylamine unit, -**R<sub>8</sub>**NR<sub>9</sub>-, in the polyalkylamine of formula (II); and

**n** represents an integer from 3 to 6.

35 (Previously Presented). The compound of Claim 34, wherein **R<sub>3</sub>** is a hydrogen atom.

36 (Currently Amended). The compound of Claim 30, wherein **R<sub>1</sub>** represents a -C(O)**R<sub>5</sub>** group; **R<sub>5</sub>** represents a C<sub>12</sub>-C<sub>18</sub> linear or branched alkyl or alkenyl; **W** represents -CH=CH-; **R<sub>2</sub>** represents a C<sub>12</sub>-C<sub>18</sub> linear or branched alkyl or alkenyl; **R<sub>3</sub>** and **R<sub>4</sub>** represent, independently, a group -C(O)-NR<sub>6</sub>R<sub>7</sub>, wherein **R<sub>6</sub>** and **R<sub>7</sub>** represent, independently, an alkylamine or a polyalkylamine having the general formula (II):



wherein

**R<sub>8</sub>** ~~represent~~ represents a C<sub>1</sub>-C<sub>4</sub> alkyl;

**R<sub>9</sub>** represents a hydrogen or a polyalkylamine branch of formula (II), said **R<sub>8</sub>** and **R<sub>9</sub>** may be the same or different for each alkylamine unit, -**R<sub>8</sub>**NR<sub>9</sub>-, in the polyalkylamine of formula (II); and

**n** represents an integer from 3 to 6.

37 (Currently Amended). The compound of Claim 30, wherein **R<sub>1</sub>** represents a  $\text{-C(O)R}_5$  group; **R<sub>5</sub>** represents a C<sub>12</sub>-C<sub>18</sub> linear or branched alkyl or alkenyl; **W** represents  $\text{-CH=CH-}$ ; **R<sub>2</sub>** represents a C<sub>12</sub>-C<sub>18</sub> linear or branched alkyl or alkenyl; **R<sub>3</sub>** and **R<sub>4</sub>** form, together with the oxygen atoms to which they are bonded, a heterocyclic ring comprising  $\text{-C(O)-[NH-R}_8\text{]}_n\text{-NH-C(O)-}$ ,

wherein

**R<sub>8</sub>** represents a C<sub>1</sub>-C<sub>4</sub> alkyl, wherein for each alkylamine unit having the formula  $\text{-NH-R}_8\text{-}$ , said **R<sub>8</sub>** may be the same or different; and

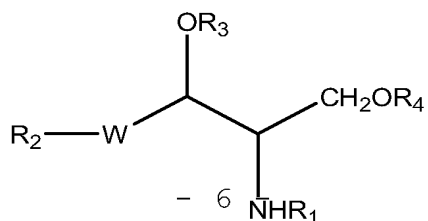
**n** represents an integer from 3 to 6.

38 (Previously Presented). The compound of Claim 30, wherein said **R<sub>8</sub>** is a C<sub>3</sub>-C<sub>4</sub> alkyl.

39 (Previously Presented). The compound of Claim 30, being N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

40 (Cancelled).

41 (Currently Amended). A process for the preparation of a sphingoid-polyalkylamine conjugate of formula (I)



wherein

**R<sub>1</sub>** represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group -C(O)R<sub>5</sub>;

**R<sub>2</sub>** and **R<sub>5</sub>** represent, independently, a branched or linear C<sub>10</sub>-C<sub>24</sub> alkyl, alkenyl or polyenyl ~~group~~group;

**R<sub>3</sub>** and **R<sub>4</sub>** are, independently, a group -C(O)-NR<sub>6</sub>R<sub>7</sub>, in which **R<sub>6</sub>** and **R<sub>7</sub>** being the same or different for **R<sub>3</sub>** and **R<sub>4</sub>**, ~~and~~ represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or

~~**R<sub>3</sub>** represents a hydrogen; or~~

**R<sub>3</sub>** and **R<sub>4</sub>** form together with the oxygen atoms to which they are bound a heterocyclic ring comprising -C(O)-NR<sub>9</sub>-[R<sub>8</sub>-NR<sub>9</sub>]<sub>m</sub>-C(O)-, in which **R<sub>8</sub>** represents a saturated or unsaturated C<sub>1</sub>-C<sub>4</sub> alkyl and **R<sub>9</sub>** represents a hydrogen or a polyalkylamine of the formula -[R<sub>8</sub>-NR<sub>9</sub>]<sub>n</sub>-, wherein said R<sub>9</sub> or each alkylamine unit R<sub>8</sub>NR<sub>9</sub> may be the same or different in said polyalkylamine; and **n** and **m** represent, independently, an integer from 1 to 10; and

~~**W** represents a group selected from -CH=CH-, -CH<sub>2</sub>-CH(OH)- or -CH<sub>2</sub>-CH<sub>2</sub>-;~~

the process ~~comprises~~comprising:

(a) providing a sphingoid compound of formula (I) wherein  $R_1$ ,  $R_2$  and W have the meaning as defined above and  $R_3$  and  $R_4$  represent, independently, a hydrogen atom or an oxo protecting group, wherein at least one of said  $R_3$  and  $R_4$  represent a hydrogen atom;

(b) reacting said compound of step (a) with an activating agent for activating the hydroxyl moieties of  $OR_3$  and/or  $OR_4$ , optionally in the presence of a catalyst, to obtain an activated  $OR_3$  and/or  $OR_4$  group;

(c) reacting said activated sphingoid compound with a polyalkylamine; and

(d) removing said protecting group, thereby obtaining said sphingoid-polyalkylamine conjugate of formula (I) as defined above.

42 (Previously Presented). The process of Claim 41, wherein said sphingoid-polyalkylamine conjugate is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

43 (Currently Amended). The process of Claim 41, wherein said protecting group is a primary amine protecting group selected from the group consisting of trifluoroacetamide, fmoc, carbobenzoxy (CBZ), and dialkyl ~~phosphoramidates~~ phosphoramidates.

44 (Currently Amended). The process of Claim 41, wherein said activating agent is ~~selected from~~ N,N'-

disuccinimidylcarbonate, di- or tri-phosgene or an imidazole derivative.

45 (Currently Amended). The process of Claim 41, wherein said activation is performed in the presence of a catalyst, the catalyst being ~~selected from~~ 4-dimethylamino pyridine (DMAP), tetrazole, dicyanoimidazole or diisopropylethylamine.

46 (Previously Presented). The process of Claim 41, for obtaining a di-substituted sphingoid-polyalkylamine conjugate, wherein

in step (a) both  $R_3$  and  $R_4$  are hydrogen atoms, and said process comprises reacting the compound of formula (I) with at least two equivalents of polyalkylamine to obtain a disubstituted sphingoid-polyalkylamine conjugate, with identical polyalkylamine substituents.

47 (Currently Amended). The process of Claim 41, for obtaining a di-substituted sphingoid-polyalkylamine conjugate, wherein

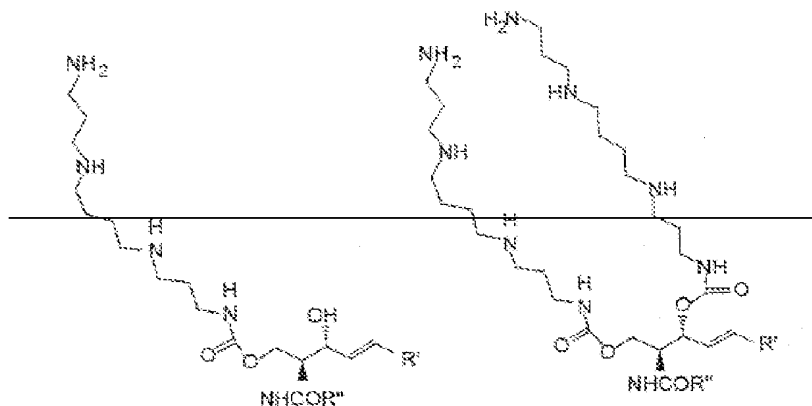
in step (a) at least one of  $R_3$  or  $R_4$  is protected with a protecting group, the process comprises reacting in step (c) the activated sphingoid compound with a first polyalkylamine; removing the protecting group of  $R_3$  or  $R_4$  to obtain an unprotected oxo group; reacting the unprotected compound with an activating agent to obtain an activated mono-substituted

sphingoid-polyalkylamine conjugate; and reacting said activated mono-substituted sphingoid-polyalkylamine conjugate with a second polyalkylamine, thereby obtaining a di-substituted sphingoid-polyalkylamine conjugate, in which said first and second polyalkylamine may be the same or different.

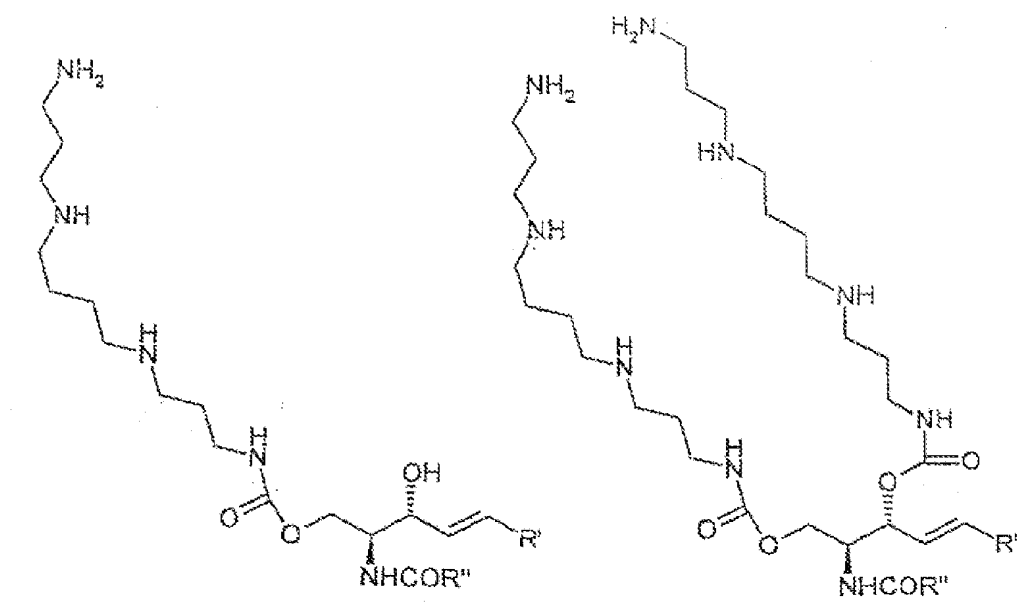
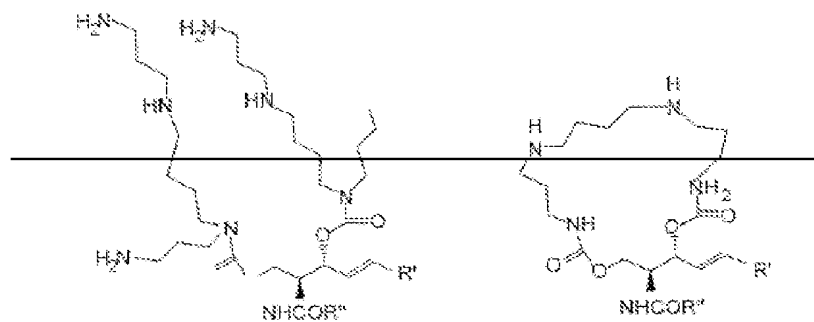
48 (Previously Presented). The process of Claim 41, for obtaining a heterocyclic sphingoid-polyalkylamine conjugate, wherein

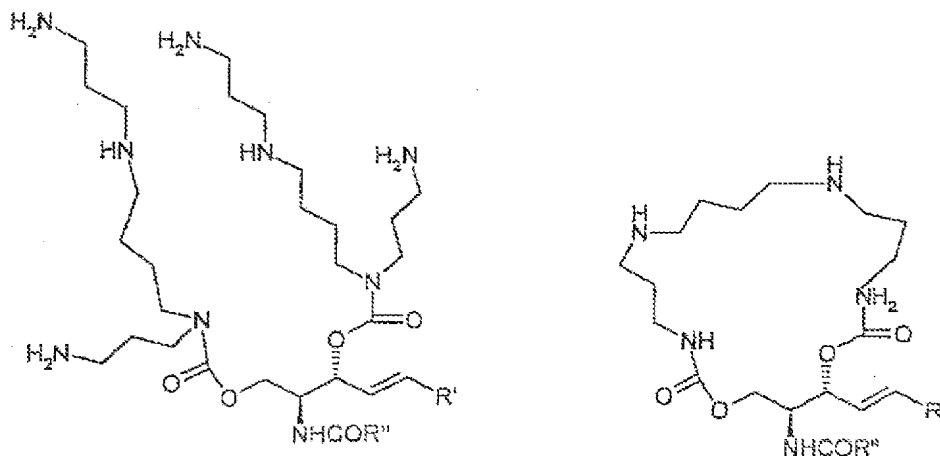
in step (a) both  $R_3$  and  $R_4$  are hydrogen atoms, said sphingoid compound is reacted with at least two equivalents of an activating agent to obtain an activated sphingoid with both  $R_3$  and  $R_4$  activated and reacting said activated sphingoid compound with less than an equivalent of polyalkylamine, thereby obtaining a heterocyclic sphingoid-polyalkylamine conjugate.

49 (Currently Amended). The process of Claim 41, for obtaining any one of the sphingoid-polyalkylamine conjugates as follows:

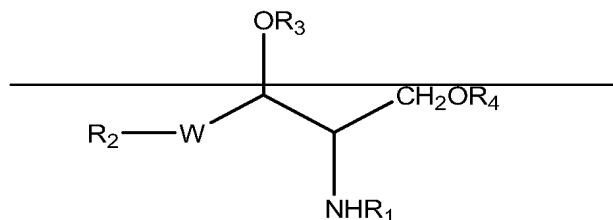








50 (Withdrawn-Currently Amended). A composition comprising a sphingoid-polyalkylamine conjugate in accordance with claim 20, and a pharmaceutically acceptable carrier ~~of the formula (I):~~



wherein

~~R<sub>1</sub> represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group -C(O)R<sub>5</sub>;~~

~~R<sub>2</sub> and R<sub>5</sub> represent, independently, a branched or linear C<sub>10</sub>-C<sub>24</sub> alkyl, alkenyl or polyenyl groups;~~

~~R<sub>3</sub> and R<sub>4</sub> are independently a group -C(O)-NR<sub>6</sub>, R<sub>7</sub>, R<sub>6</sub> and R<sub>7</sub> being the same or different for R<sub>3</sub> and R<sub>4</sub> and represent, independently, a hydrogen, or a saturated or unsaturated~~

~~branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or~~

~~$R_3$  is a hydrogen; or~~

~~$R_3$  and  $R_4$  form together with the oxygen atoms to which they are bound a heterocyclic ring comprising  $C(O)-NR_3-[R_2-NR_2]_m-C(O)-$ ,  $R_2$  represents a saturated or unsaturated  $C_1-C_4$  alkyl and  $R_3$  represents a hydrogen or a polyalkylamine of the formula  $-[R_2-NR_2]_n-$ , wherein said  $R_2$  or each alkylamine unit  $R_2NR_2$  may be the same or different in said polyalkylamine; an~~

~~$n$  and  $m$  are independently an integer from 1 to 10;~~

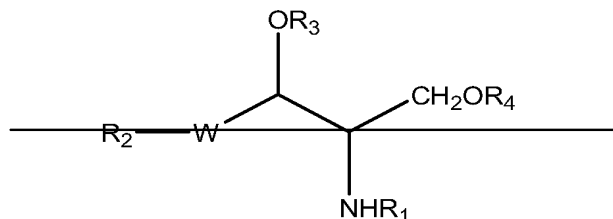
~~$W$  represents a group selected from  $-CH=CH-$ ,  $-CH_2-$ ,  $CH(OH)-$  or  $-CH_2-CH_2-$ .~~

51 (Cancelled).

52 (Withdrawn). The composition of Claim 50, wherein said sphingoid-polyalkylamine conjugate is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

53 (Withdrawn). The composition of Claim 50, further comprising a biologically active molecule.

54 (Withdrawn-Currently Amended). In the method of capturing a molecule having a negative charge, a negative dipole or a local negative dipole with a conjugate capable of capturing said molecule by electrostatic interaction, the improvement wherein said conjugate is a compound in accordance with claim 30 ~~of formula (I):~~



wherein

~~$R_1$  represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group  $-C(O)R_5$ ;~~

~~$R_2$  and  $R_5$  represent, independently, a branched or linear  $C_{10}$ - $C_{24}$  alkyl, alkenyl or polyenyl groups;~~

~~$R_3$  and  $R_4$  are independently a group  $-C(O)-NR_6$ ,  $R_7$ ,  $R_6$  and  $R_7$  being the same or different for  $R_3$  and  $R_4$  and represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or~~

~~$R_3$  is a hydrogen; or~~

~~$R_3$  and  $R_4$  form together with the oxygen atoms to which they are bound a heterocyclic ring comprising  $-C(O)-NR_9-[R_8-NR_9]_m-C(O)-$ ,  $R_8$  represents a saturated or unsaturated  $C_1$ - $C_4$  alkyl and  $R_9$  represents a hydrogen or a polyalkylamine of the formula  $-[R_8-NR_9]_n-$ , wherein said  $R_9$  or each alkylamine unit  $R_8NR_9$  may be the same or different in said polyalkylamine; and  $n$  and  $m$  are independently an integer from 1 to 10;~~

~~$W$  represents a group selected from  $-CH=CH-$ ,  $-CH_2-$ ,  $-CH(OH)-$  or  $-CH_2-CH_2-$ .~~

55 (Withdrawn). The method of Claim 54, wherein said compound is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

56-58 (Cancelled)

59 (Previously Presented). The compound of Claim 34, wherein  $R_3$  and  $R_4$  represent the same or different polyalkylamine.